STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
UTAH GEOLOGICAL AND MINERAL SURVEY

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Plate 1
Utah Geological and Mineral Survey Map 89
Provisional Geologic Map of the Sego Canyon Quadrangle

Base from U.S. Geological Survey: Florence Canyon 4 SW, 1963

SCALE 1:24 000

1 0 1/2 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 .5 0 1 KILOMETER

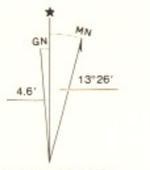
CONTOUR INTERVAL 40 FEET
DOTTED LINES REPRESENT 20-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

Field mapping by author in 1982
Dr. J. Keith Rigby, Thesis Advisor/Chairman
J. Parker, Cartographer

PROVISIONAL GEOLOGIC MAP OF THE SEGO CANYON QUADRANGLE, GRAND COUNTY, UTAH

by
Grant C. Willis
Utah Geological and Mineral Survey

1986



1986 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

QUADRANGLE LOCATION

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Plate 2
Utah Geological and Mineral Survey Map 89
Provisional Geologic Map of the Sego Canyon Quadrangle

FORMATION		SYMBOL	THICKNESS feet (meters)	LITHOLOGY	CURRENT DIRECTIONS
Unconsolidated deposits		Q	0-66 (0-20)		
WASATCH FORMATION	Unit 3	Tw_3	125 (38)		
	Unit 2	Tw_2	121 (37)		
	Unit 1	Tw_1	1080 (330)		
Tuscher Formation		Kt	490-500 (150-152)		
Farrer Formation		Kfr	230-676 (70-206)		
NESLEN FORMATION	Upper Member	Knu	75 (23)		
	Lower Member	Knl	66 (20)		
SEGO SANDSTONE	Upper Member	Kseu	33 (10)		
	Middle Member	Ksem	39 (12)		
	Lower Member	Ksel	56 (17)		
MANCOS SHALE	Buck Tongue	Kmbt	121-236 (37-72)		
Castlegate Sandstone		Kc	66-93 (20-28)		
Blackhawk Formation		Kb	51-121 (16-37)		
MANCOS SHALE	Upper Shale	Kmu	330+ (100+)		

CORRELATION OF MAP UNITS

Surface Geology

QUATERNARY
- Holocene
- Pleistocene

Qal, Qaf, Qc, Qe, Qms, Qap

TERTIARY
- Eocene—Paleocene

Tw_3, Tw_2, Tw_1

Unconformity

CRETACEOUS
- Campanian

Kt, Kfr, Knu, Knl, Kseu, Ksem, Ksel, Kmbt, Kc, Kb, Kmu

JURASSIC

JURASSIC-TRIASSIC

TRIASSIC

Subsurface Geology

Kmf	Mancos Shale, Ferron Sandstone Member
Kml	Mancos Shale, Lower Member
Kd	Dakota Sandstone
Kcm	Cedar Mountain Formation
Jmb	Morrison Formation, Brushy Basin Member
Jms	Morrison Formation, Salt Wash Member
Jmt	Morrison Formation, Tidwell Member
Je	Entrada Sandstone
JTrn	Navajo Sandstone
JTrk	Kayenta Formation
JTrw	Wingate Sandstone
Trc	Chinle Formation

SYMBOLS

CONTACT
Dashed where approximate

NORMAL FAULT
Dashed where location inferred; dotted where covered; bar and ball on downthrown side

6600

STRUCTURAL CONTOUR
Contour interval 200 feet
Datum base is Ballard Coal Zone

TRACE OF AXIAL SURFACE OF FOLD

Anticline — Syncline

STRIKE AND DIP OF BEDDING

4

Inclined

OTHER SYMBOLS

Coal exploratory drill hole

Abandoned oil and gas well — Dry hole

Adit

DESCRIPTION OF MAP UNITS

(Surface Geology)

Qal — Alluvial deposits—*Poorly to moderately sorted intermittent stream deposits in small canyons and washes.*

Qaf — Alluvial fan deposits—*Poorly to moderately sorted sand, mud, silt, and angular sandstone blocks. Typically have a fan-shaped morphology.*

Qc — Colluvial deposits—*Angular, poorly sorted slope deposits. Some form a resistant cover and have been isolated by subsequent erosion.*

Qe — Eolian deposits—*Well sorted sand and silt deposited by wind action.*

Qms — Landslide deposits—*Poorly sorted debris deposited by mass movement on slopes. Primarily involving surficial material. Generally small and localized, and usually exhibiting hummocky topography.*

Qap — Pediment and beheaded pediment deposits—*Poorly to moderately sorted thin cover on bevelled surface of nonresistant bedrock units. Some deposits have been stranded by subsequent stream erosion.*

Tw_3 — Upper unit of the Wasatch Formation—*Interbedded yellow and brown sandstone and dark brownish-red siltstone and mudstone. Forms cliffs and steep slopes. Sandstone beds are planar to lenticular fluvial channel deposits that are generally thicker and lighter colored than the Farrer and Tuscher Formations.*

Tw_2 — Middle unit of the Wasatch Formation—*Poorly exposed, slope-forming, brownish-red mudstone and siltstone and thin-bedded sandstone.*

Tw_1 — Lower unit of the Wasatch Formation—*Interbedded yellow sandstone and dark brownish-red siltstone and mudstone. Forms steep slopes and cliffs. Sandstone is planar to lenticular. Basal contact is marked by an undifferentiated conglomerate and conglomeratic sandstone unit 0-100 feet (0-30 m) thick called the "conglomerate of Dark Canyon."*

Kt — Tuscher Formation—*Interbedded brown, cliff-forming sandstone and yellowish-gray mudstone and siltstone. Dominated by lenticular channel sandstone. Forms steep slopes and cliffs. Often difficult to distinguish from the Farrer Formation.*

Kfr — Farrer Formation—*Interbedded light- to dark-brown, cliff-forming, thin- to thick-bedded sandstone, and pale gray to brown, slope-forming mudstone and siltstone. Also has carbonaceous shale in the lower part. Sandstone beds are mostly lenticular channel deposits.*

Knu — Upper member of the Neslen Formation—*Interbedded mudstone, carbonaceous shale, coal, planar thin-bedded sandstone and lenticular channel sandstone. Lenticular channel sandstone beds increase upward. Contains a few minor carbonaceous shale and coal zones and one important zone, the Chesterfield, which occurs in the lower part. The Thompson Sandstone bed occurs at the base of the unit.*

Knl — Lower member of the Neslen Formation—*Interbedded mudstone, carbonaceous shale, coal, and sandstone. Forms a ledgy slope zone. Contains numerous minor carbonaceous shale and coal zones and two major coal zones: the Palisade in the lower part and the Ballard at the top.*

Kseu — Upper Member of the Sego Sandstone—*Medium to dark gray, slope-forming, thin-bedded mudstone in the lower part which coarsens upward to yellowish-orange, thin- to massive-bedded, cliff-forming sandstone in the upper part. Cross bedding is common. Intensely bioturbated in some horizons; channel sandstone beds near the top. The upper of three repeated coarsening upward sequences in which the sandstone beds (near-shore deposits) increase westward while the mudstone beds (marine deposits) increase eastward.*

Ksem — Middle Member of the Sego Sandstone—*Coarsening upward sequence similar to the upper member but with fewer channel sandstone beds near the top and with more mudstone in the lower part.*

Ksel — Lower Member of the Sego Sandstone—*Coarsening upward sequence similar to the middle member but with more mudstone in the lower parts.*

Kmbt — Buck Tongue of the Mancos Shale—*Medium to dark gray, slope-forming, bentonitic, gypsiferous marine mudstone. Contains zone with mudstone concretions up to 3 feet (1 m) in diameter. Forms a broad bench and sparsely vegetated "badland" slopes.*

Kc — Castlegate Sandstone—*Pale yellowish-orange, thin to massive bedded sandstone with minor mudstone, carbonaceous shale and coal. Often with cross, convolute or channeled bedding. Forms a prominent massive cliff. Locally bioturbated. Contains channel sandstone deposits near top on west side of area. Becomes more marine eastward.*

Kb — Blackhawk Formation—*Pale yellowish-orange, cliff-forming, thin to massive-bedded sandstone and minor dark gray mudstone, carbonaceous shale and coal. Often with convolute bedding or cross bedding. Locally intensely bioturbated. Often difficult to distinguish from the overlying Castlegate Sandstone. Forms lower part of "Book Cliffs" cuesta.*

Kmu — Upper member of the Mancos Shale—*Medium to dark gray, slope-forming, gypsiferous, bentonitic mudstone. Coarsens upward to thin interbedded sandstone and mudstone. Forms sparsely vegetated "badlands" topography.*